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ABSTRACT

This catalog is intended to be issued periodically as a means of extending and updating teaching materials which have been previously published through ERIC by these authors. The materials include the Alpha and Gamma levels of the "Greenbook System," pre-professional and entry in-service professional levels of an integrated sequence of five training programs for higher education professionals; an operational manual for the Open Classroom, an autoinstructional learning laboratory at Skagit Valley College (Washington); and several self-contained, programmed courses in philosophy and mathematics developed for this Open Classroom. The present issue of the catalog contains two sample task analyses for addition to the "Greenbook System" (ED 103 083 and 084), and two pages to be inserted in the Coach's Manual section of "Basic Open Classroom Documentation" (ED 103 086). A sample of work required for an optional "A" project is supplied for "Philosophic Heuristic Instruction I" (ED 103 087). "Oleanna Math Program Materials" (ED 103 088) is substantially updated in the areas of pre-algebra, intermediate algebra, and analytic geometry. A number of additional short units and quick reviews are supplied for "Oleanna Math Program Smorgasbord" (ED 103 089). Subsequent issues of the catalog will provide revisions and additions to these and further courses available through ERIC (see JC 750 523, 524, and 525). (BB)

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ED112971

GREENBOOK ABSTRACT & CATALOG -- 1

September, 1975

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The Greenbook Abstract & Catalog will be published occasionally through ERIC as a means of updating and extending teaching materials placed in the public domain by Walt Coole and Henry Reitan.

This publication's page-numbering will appear in the lower right-hand corner of the page: the section-letter, followed by a page-number within the section. Pagination appearing in the lower center of the page refers to a constituent document or a page-replacement

The originators of these materials are:

Walter A. Coole, Lead Instructor at Skagit Valley College's Open Classroom and

Henry M. Reitan, Professor of Education at the University of Washington's Community College Development Center

It is our intention to make available, some of the results of our teaching preparation as a *starting point* for other teachers who might be able to use such materials.

Unless otherwise noted, all of the content is "public domain". We'd appreciate an acknowledgement.

JC 750 522

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Coole & Reitan
c/o Philosophy Department
Skagit Valley College
Mt. Vernon, WA 98273

THE GREENBOOK SYSTEM FOR PROFESSIONAL TRAINING IN HIGHER EDUCATION

GENERAL DESCRIPTION. The Greenbook System is an integrated collection of five training programs for higher education: four professional in-service training and one pre-professional.

Each of the programs can be used as a sequence of "courses" or treated as a personalizing framework for organizing other, more conventional training, while accounting for requisite learning not formally available.

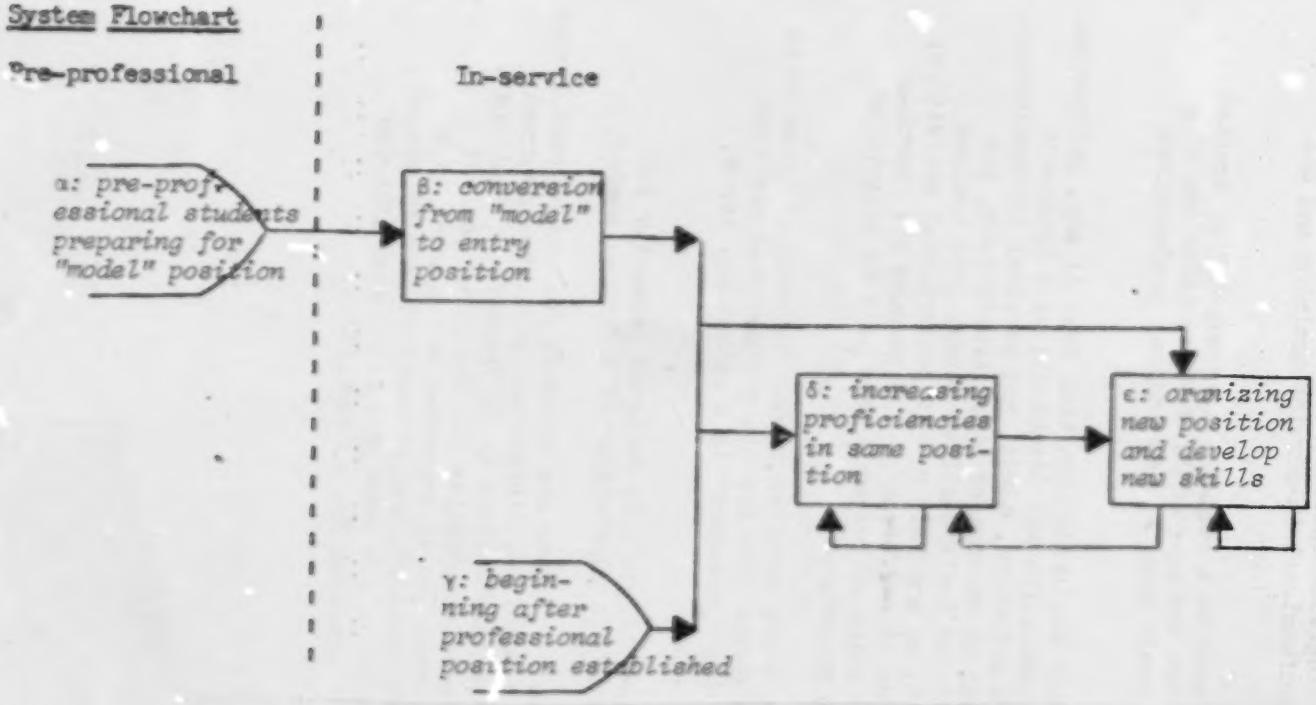
The System was developed under the assumption that few, if any, professional positions in post-secondary education are identical; each trainee's program is unique to his own situation, needs, and personal idiosyncracies. While cooperative group-study is encouraged where appropriate, the System is basically designed for individualized study. The trainee develops his own "Greenbook", an analysis of his professional activities; establishes his own standards of performance; and pursues his learning requirements, using modular units of prepared materials he selects or developing his own learning procedures.

The trainee's accomplishments are compiled in his "Greenbook" interleaved with critical data and procedural lore for his professional position. His guide for constructing his "Greenbook" is a whimsical, terse "Purplebook".

The pre-professional program, "Alpha", is designed primarily for use in graduate schools under the supervision of a faculty member.

The professional in-service components are intended for use by established teachers, administrators, counselors, librarians, etc. The programs may be operated by employing institutions or by "parent institutions." In either case, the trainee is responsible for the direction and evaluation of his own progress. He may be supported and coached to a limited extent by a "proctor", a middle-status faculty member who acts as a coach and provides for materials and liason with the parent institution.

System Flowchart


Pre-professional
In-service
α: pre-professional students preparing for "model" position
β: conversion from "model" to entry position
δ: increasing proficiencies in same position
ε: organizing new position and develop new skills
γ: beginning after professional position established

PROGRAM OBJECTIVES

α: ALPHA. In this program, the student, a college senior or graduate student:

- --Describes an ideal institution and position within it
- --Studies examples of similar institutions and positions
- --Determines an "entry position" likely to lead to an approximation of his ideal
- --Analyzes components of the model entry-position
- --Systematically masters each component, documenting his mastery untill all or almost all requisite skills are acquired and information learned
- --Pursues a strategy of job-hunting likely to yield employment

β: BETA. Successful Alpha students pursue this program immediately upon employment, even if they do not "complete" the Alpha program. The trainee:

- --Studies the employing institution, its surrounding community, and his contractual commitments
- --Accounts for differences between the model entry-position for which he prepared and his actual situation
- --Following a deliberate strategy, organizes his work and accomplishes additional learning as needed
- --(Ideally, at the end of his first year of service) assesses his performance and re-evaluates his career expectations

He is then prepared to begin either the Delta or Epsilon program.

2.2

γ: GAMMA. This is an entry-program for the Greenbook System designed for the established professional or the new-hire who has not conducted previous Greenbook training. In the Gamma program, the trainee:

--Studies, briefly, his institution and its community
--Identifies his professional commitments and analyzes them into component parts
--Systematically evaluates his competence in each part of his position
--Using one of several possible strategies, brings all of his competencies to a level that satisfies his professional obligations and his self-expectations

δ: DELTA. Entering from either the Beta, Gamma, or Epsilon programs, the trainee-professional uses this program to develop proficiencies considerably beyond minimum acceptable standards for about 10-20% of his established professional position. This program can be repeated possibly a dozen times profitably. To accomplish this, he:

--Reviews and extends his knowledge of his institution and the community it serves, gathering information that indicates changes in the role he plays
--Accounts for minor changes in his contracted duties, eg. changes in committee assignments
--On the basis of evaluative data, reviews all of his activities, identifying the portion (about 10-20%) that he feels the most need for improving and setting new standards for performance
--Using suggested techniques, sets realistic standard-raising goals for himself and pursues them
--Takes stock of his career expectations and his progress toward them

ε: EPSILON. This program's purpose is to provide for anticipated or newly-entered positions that represent a sharp departure for the professional trainee: new institutions, interdepartmental transfers, major changes in primary jobs. Prerequisite program-completions for the Epsilon program are Beta, Gamma, or Delta--or Epsilon; the trainee may well interrupt some Greenbook training program in progress. The Epsilon trainee:

--Reviews his career plan and, if necessary, modifies it in light of his new or anticipated circumstances
--Selects from his established Greenbook, relevant material for a new one
--Expands accomplished materials in the new Greenbook to describe and analyze the new situation
--Identifies new duties to be undertaken and establishes initial standards of performance and skill
--Systematically acquires new skills and knowledge

He may then upgrade his performance, using the Delta program; or he may undertake furthur position-changes, re-using the Epsilon program.

GREENBOOK SYSTEM MATERIALS

Worksheets and program (trainee) manuals are now completed and have been tested on a few trainees. Microfiches are available through ERIC; although copyrighted, this material may be reproduced from microfiche by using institutions for instructional purposes without written permission--however, for convenience, it may be helpful to know that hard-copy may be purchased directly from:

Kendall/Hunt Publishing Co.
2400 Kerper Blvd.
Dubuque, Iowa 52001

Microfiche identifications are:

Purplebook Alpha--ED 103 083
Purplebook Gamma--ED 103 084
Greenbag Worksheets--ED 103 085

Current prices: $.79 apiece.

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We've produced several audiotutorial kits which we can supply at cost...

GREENLAP #1. Reitan & Coole: *Introduction to the Greenbook System.* Reitan discusses the motivation of the Greenbook System's authors and Coole tells how the Greenbook System provides for individualized self-training. Useful, but not an essential for Alpha and Gamma program.

GREENLAP #2. Coole: *A Letter from John Socrates.* Walt Coole's alter ego criticizes the Greenbook System on the basis of hypothetical testing. Gives examples of how to apply directions in analyzing a position.

GREENLAP #3. Coole: *Allocation of Job Component Importance-Rating.* Examples of how to derive quantified ratings of portions of a professional position's importance.

GREENLAP #4. Coole: *NEA Code of Ethics.* Case-study exercises in applying the NEA Code. Users must order directly, "The NEA Code of Ethics of the Education Profession" from:

The National Education Association
1201 Sixteenth St. NW,
Washington, DC 20036

GREENLAP #5. Coole: *The Use of Performance Objectives in Philosophy Instruction and Possible Conflicts with Academic Freedom OR A Smile Between One Philosophical Haruspex and Another Needn't be Enigmatic.*

GREENLAP #6. Mundt: *Reform Through the Instrument of Higher Education.* The Director of the Washington State Community College System gives his views of how education should attack the problems of society.

GREENLAP #7. Coole: *A Conceptual Construct: 'Responsibility' OR Why Is "Responsibility" Such a Nuisance?*

GREENLAP #8. Coole & Iverson: *Protocols of Bourbaki.* How to recite in a satisfactory manner in an Open Classroom situation. Both for group and individual presentation.

* * * * * * * * * * * * *

Pages 2.6ff are a task analysis and an operational analysis of the kind that will be provided through the *Greenbook Abstract & Catalog* in future issues.

You'll notice that in the lower left-hand corner of each, there's a 3-digit sequence number: "0.4" for task analyses and "0.5" for operational analyses; the final digit of each is a sequence-number for identification.

Two model job-analyses are published in *Open Classroom Documentation,* ERIC ED 103 086; they are:

2.1 Deaver & Coole: Open Classroom Lead Man
3.1 Deaver & Coole: Open Classroom Teacher

Job-analysis identification numbers are assigned so that the first digit [1-9] is one of the Greenbook System's "Functional Categories"; the last digit is a sequence number.

H

TASK ANALYSIS

Analyst: Walter A. Coole

Task title: Assisting the Librarian Select Materials Within a Discipline

Related job–title: Instructor Id.: 2. Importance: 1

Req. Comp.: 1

Lng. Diff.: 1

Task description: This activity is sometimes "understood" to be a duty of every member of a school's faculty. In some cases, the special responsibility is explicitly assigned to a designated individual. It is sometimes viewed as a fringe benefit whereby one can gain access to current reading--simply by ordering those books which happen to be of ingerest to the teacher.

This task, by contrast, is to provide expert disciplinary opinion on possible acquisitions which will be of interest to the library's users (whether students or not) and which will be of specific use in the instructional program.

[See over for possible operations.]

Since acquisitions budgets are usually too small, the acquisitions librarian should be able to use advice to prioritize among recommendations.

Standard of competence:

1. If the acquisitions librarian is competent, there should be considerable agreement between the staff-member and the librarian. Running conflict between the two indicates that at least one of them needs to re-train.

2. Of the items recommended, most of them should have a circulation-history at expected level within the succeeding two years.

References:

Task Learning Procedure

Study:

Practice:

Demonstration:

( ) Self-evaluated

_____ _____

(Date) (Signature)

_____ _____

(Place) (Title)

OPERATIONS LIST

1. Maintain a knowledge of library acquisitions policy and practice, including fund-allocations affecting materials pertaining to the discipline.
2. Be familiar with reading abilities, interests and needs of the library's clientele who would be using material within the discipline.
3. Know the library's holdings in the discipline: stack holdings, reference, pamphlet-files, periodicals, bibliographic aids; be aware of inter-library loan accessability.
4. Identify and maintain current knowledge of: "standard lists" for the discipline for libraries of the size and kind at your institution.
5. Be able to find current literature and its evaluation.
6. Compile recommendations for acquisitions, using the following priority-scheme:
    A. Items needed for immediate instructional use
    B. Critical to maintain the collection's standards
    C. Useful for specialized investigations by students and faculty
    D. Long-range utility for instructional program
    E. "Browsing material"
7. If acquisitions are backed for lack of funds, review unordered items to remove items no longer needed

H

OPERATION ANALYSIS

Analyst: Walter A. Coole

Operation title: Maintaining a File Cabinet

Related tasks:

Title	Id #	Importance

Operation description: This method of maintaining a file cabinet uses the Greenbook System to advantage. It uses divisions and folders with categories, jobs, tasks identical with those used in analyzing one's professional position in the Greenbook.

By filing all correspondence and papers in this order, the file then becomes an extention of current working papers for the Greenbook System; by writing the appropriate sequence numbers on each piece before filing, there's a quick way to have a secretary do the filing--and later re-filing when necessary.

When periodically reviewing a job the file becomes a convenient checking device.

Standard of competence:

(1) Papers shouldn't be scattered about one's office.
(2) Once filed, retrieval should be quick and sure.
(3) This activity shouldn't take too much time.

Comments

--Old files can be maintained without re-sorting. Keep them a few years and then cull them for nuggets and toss the rest out.

--Reviewing old files is an activity to carry on when students miss appointments or you're fiddling about the office waiting for a phone call.

Operation Learning Procedure

Study:

Practice:

Demonstration:

( ) Self-evaluation

(Date)	(Signature)
(Place)	(Title)

SKAGIT VALLEY COLLEGE OPEN CLASSROOM

OPEN CLASSROOM DOCUMENTATION

The College's Open Classroom provides continuous-entry, independent-study instruction in several disciplines for both day and evening students: philosophy, mathematics, learning skills, education, management, and Scandinavian studies. It would appear that many disciplines could be offered in this format: an alternative to the traditional presentation of subject-matter.

In developing this program, a number of audiotapes and documents had to be produced. While little or none of this material can be taken into the program of another institution whole cloth, much of it can be adapted easily by applying red pencil and re-typing or re-recording.

To save colleagues the tedium of some of this routine work, we present ours for your use. A careful review of this material will also place the programs described in the *Greenbook Abstract & Catalog* into a fuller context.

This material is available through ERIC in microfiche or hard-copy. Title: BASIC OPEN CLASSROOM DOCUMENTATION. ED 103 086. Microfiche: $.76; Hard copy: $3.32.

Pages 3.2 and 3.3 are completed pages to be inserted in the "Coach's Manual" in place of pp. 8-9 which were inserted as place-holders.

TUTORING IN LOGIC

AS A LOGIC COACH, YOU WILL BE DESIGNATED: "POLECAT GUIDE"!

Frequently, logic students attempt to perform assigned tasks without having mastered the reading assignment thoroughly. When dealing with logic students, procede from the syllabus, using the "Protocols of Bourbaki" to organize the interview.

If the student appears to have glossed over previous parts of the course, see if you can identify what the student has failed to master; if you can, ask the student to take 30 minutes to re-study that point.

Double-check informal logic students to make sure that they've selected projects for Unit IV and place special orders at the bookstore.

Tiger
Learning Skills

TUTORING IN TIGER LEARNING SKILLS

TIGER LEARNING SKILLS COACHES ARE KNOWN AS "SUPER TIGERS."

In the sequence of Units I-II-III, you should be sufficiently ahead of other students to be of help to them. Therefore, as soon as you can, get about a week ahead of the completion schedule.

In Unit IV, you should refer all problems to the instructor; this unit has many alternate ways to accomplish its objectives and you're not likely to know what the instructor has in mind for the particular student's situation.

Students who are planning to make their "A" by completing a project from the project-list should be reminded that the materials should be ordered early in the term; all materials are available through the bookstore, but may take as much as a month to arrive.

PHILOSOPHIC HEURISTIC INSTRUCTION (PHI)

There are three parts in this Open Classroom program:

I. General philosophic courses:

Introduction to philosophy
Advanced survey of philosophy
Introduction to ethics
Advanced survey of ethics
and directions for students interested in constructing their own studies of concepts and modern philosophers when resources are available

The latter directions are addressed mainly to the mature "hobbyist" who is pursuing philosophic training for other than academic purposes. Title: PHILOSOPHIC HEURISTIC INSTRUCTION (I). ED 103 087. Microfiche: $.76; Hard copy: $3.32.

II. Informal logic and problem-solving. Available materials include course outline, syllabus, and a project-file. Materials to be submitted to ERIC in September, 1975 will be available both in microfiche and hard-copy form. Title: Philosophic Heuristic Instruction (PHI) -- II.

III. Elementary formal logic. Available materials include course outline, syllabus, and supplementary print material. This material will be submitted to ERIC in September, 1975 and will be available both in microfiche and hard-copy form. Title: Philosophic Heuristic Instruction (PHI) -- III. One audio-visual kit, not provided through ERIC, is required for the course.

Pages 4.2-4.11 were developed for the introduction to ethics materials (PHI-I) as a sample of the quality of work required for one of the optional "A" projects.

INTRODUCTION TO ETHICS: A Study of Professional Ethics by Frances Cardoza, Skagit Valley College

In this paper, Ms. Cardoza applies the "Code of Ethics of the Education Profession"[1] to moral issues involving education; these issues were raised in Ruggiero's Moral Imperative.[2]

I have interspersed commentary in italics topoint up why her responses are good enough to provide other students with a good example.

Walt Coole
Open Classroom
Skagit Valley College

To facilitate the reader's interpretation, Ruggiero's exercises have been reproduced in this type-style.

Ms. Cardoza's paper is reproduced in this type-style.

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1. Adopted by the National Education Association Representative Assembly, July, 1968 and amended July, 1970.

2. Alfred Publishing Co. 1973.

CONTEMPORARY ETHICAL CONTROVERSIES: EDUCATION

From The Moral Imperative by Vincent Ryan Ruggiero

Introduction

The following questions have been answered by using the "Code of Ethics of the Education Profession," established by the National Education Association, as the sole reference. The code provides four basic principles dealing with the educator's commitment to the student, the public, the profession, and employment practices. It also lists less general rules of behavior following the principles. However, the specific nature of many of the questions demanded extensive interpretation of the principles to fit the particular situation being dealt with. In most cases there were more than one ethical consideration and sometimes more than one principle applied. Any apparent conflict between principles has been included. The comparison to Task 4 showed that the conclusions were only sometimes different. But, although many of the answers are the same, frequently the reasoning was quite different.

This summary, written after the following detail-work was accomplished, shows good abstraction and generalization from specifics.

The student has shown a good grasp of both the structure and content of the NEA Code.

The review of Task 4 (which represented the student's "non-professional" viewpoint) and the conclusions she drew--that "answers are the same" but that "the reasoning was quite different" demonstrates that she's mastered this abstruse point: that in the discipline of ethics, reasoning to results is of great import.

. . . . . .

1. In education, as in business, mistakes are sometimes made in promoting a person. For example, a respected high school teacher with twenty years of service may be made the principal of his school. After serving for a year in this new capacity, the man may have demonstrated clearly that he is incompetent in administrative affairs. But by that time his former teaching position will have been filled. Consider the various ethical considerations involved both in retaining him and firing him, and decide what course of action and what conditions would be the most ethical solution for the school board.

There is no particular provision for this problem in the ethical code for educators. But it does say in regards to the Commitment to Professional Employment Practices, that tasks shall not be delegated to unqualified personnel. To retain the teacher in question as principal after learning of his incompetence would be to violate this. It could even be said that the school board acted unethically (according to the N. E. A. code) by hiring him as principal in the first place.

Good interpretive reading! It's difficult enough in some cases to identify which rule in a long and abstract list DOES apply; it's a lot harder to decide with assurance that NO rule applies.

The student has doon a good speculative job of extracting a possible principle and attempting to re-apply it.

2. Once in a while a case of a teacher who has taught for years with forged credentials comes to light. Once his deception is found out, of course, he is dismissed and may even be prosecuted. But consider the moral dilemma that must exist for the principal when he first learns of the lie. Suppose, for example, the principal learns that instead of having the master's degree the records indicate the teacher dropped out of college after one year as an undergraduate. And suppose that the teacher is by every measure one of the very best in the school. Should the principal expose the teacher or allow the deception to continue? Would your judgement change if the teacher were not outstanding but merely average?

The N. E. A. code of ethics states that, "the educator shall not knowingly distort or misrepresent the facts concerning educational matters in direct or indirect public expressions." This clearly indicates that the principal should expose the teacher. To do otherwise would be misrepresenting the facts indirectly. This course of action is in accord with my suggestion in Task 4. It might be noted that by forging his credentials the teacher did violate the code. It states specifically, "the educator shall not misrepresent his professional qualifications."

This is a straightforward application of the rules to both the principal and the teacher. The student demonstrated ability to apply specific rules by quoting them directly.

3. In every academic subject there are areas of controversy, questions which different schools of thought answer differently. For example, in psychology there are Freudian, Jungian, and Adlerian perspectives: in literature there are several approaches to interpretation (such as the esthetic and the psychological). Is it ethically acceptable for an instructor to teach only the school of thought he personally accepts? Would your answer be different in the case of an introductory course than in the case of an advanced course?

According to Principle I--Commitment to the Student--a teacher must not "...deny the student access to varying points of view." In an introductory course, it could be considered a denial of access because the student has not previously been exposed to the material and presumably would have difficulty obtaining other perspectives. In an advanced course however, the teacher may assume that the student has already been exposed to other points of view. My previous evaluation provided the same conclusion.

Again, a straightforward application of a specific and subsidiary rule. It's easier to decide this beacuse Ms. Cardoza identified and quoted the rule. She's shown some ability to distinguish situations where the rule MUST be applied, and when some discretion may be used.

4. In determining students' final grades, some college instructors use as one factor their personal, subjective judgment of students' effort and contribution to class discussion. The factor may vary in its weighting from 10 to 20 percent or even higher. Is this practice ethical? Under what conditions, if any?

There is nothing specific in the N. E. A. code that deals with grading. But there are more generalized principles that might apply. The code emphasizes the quality of education and the responsibility the educator has to the student as well as the public. The grading procedure of a teacher should be in accordance with these obligations. Particularly with Principle II where it states the educator has the responsibility "...for interpreting educational programs and policies to the public." because grading is an interpretation of policy.

My subjective judgement tells me that this is an excellent answer.

5. More than a few college professors today believe that the very idea of a grading system is punitive and archaic. Some of them, however, are in the minority at their institutions and are therefore required to submit grades in their courses. One way to do so and still serve their consciences is to give everyone an A, regardless of the quality or quantity of the work he submits. Discuss the morality of this practice.

The same rule that pertained to question two may apply to this problem also. It declares that the educator shall not publicly misrepresent facts dealing with educational subjects. If grading is considered a public expression, and I believe it is, the act of giving all of the students an A is unethical. Under the same principle, Commitment to the Public, there is an added statement that indicates this type of action is unethical. It says that the teacher must distinguish between his personal views and the view of the institution. This determination concides with my first one in Task 4.

Again, the student has both applied specific rules correctly and has interpreted general principles in specific cases plausibly. She has ap plied some ingenuity in seeing the conflict between personal opin ion and and institutional policy in this issue.

6. In most colleges the chairman of an academic department is responsible to the academic dean. If the dean should, for example, criticize his department for submitting so many low grades in a particular semester and demand that the department review its grading policy so that it can begin assigning "more reasonable" grades, the chairman would have to decide how to deal with the matter. Each of the following is a possible approach. Evaluate the ethical character of each:

(a) He can call in each faculty member and review his grading policy with him, attempting to determine whether the policy is too stringent.

(b) He can issue a memorandum to the department members explaining the dean's concern and desire that the department grades improve the next semester.

(c) He can issue a demand that each department member's grades conform in the future to the normal distribution curve.

In the section concerned with the professional commitment of a teacher in the code it states that the educator shall "...promote a climate in which the exercise of professional judgment is encouraged..." Solution (c) ignores, entirely, the encouragement of sound professional judgment and could be considered unethical according to the code. Neither solution (a) or (b) infringe on the rights of the instructor to use his professional judgment. Approach (a), however, is the most likely to promote professional judgment and would be the best answer to the problem. This is the same course of action suggested in Task 4.

Ms. Cardoza selected and quoted a positive general rule which logically entails her judgment of (c); I believe she's correct in the remainder of her answer.

7. Few colleges today are without their experimental courses or curriculums. In their most sophisticated form such courses or curriculums are run side by side with traditional ones so that their effectiveness can be compared. At the outset of such experiments, of course, it is impossible to be certain that the experiment will be even minimally effective. Are such experiments ethically permisible? If so, under what conditions?

If the experimental programs are in accord with the general principles of the N. E. A. code and do ignore any obligations it would be ethical to conduct them. The improvment of professional standards and service is a commitment of the educator and as long as the new programs are designed to raise the quality of education they are permissible. But the teacher is also obligated to "...protect the student from conditions harmful to learning or to health and safety." This demands that any experimental courses be carefully studied before implimentation. In Task 4 the same suggestion was given.

Again, the student has given a plausible answer based upon a specific, positive statement of an educator's commitment.

8. A teacher is usually assigned to teach courses with specific content. He is expected to select or create lessons that will impart the knowledge and develop the skills that are associated with that content. To do other than that--for example, to teach economics instead of literature in a course--would clearly be to break a moral obligation to the students who enrolled for the advertised course. Yet in subtler cases the answer is not so clear. Would it violate that obligation if a chemistry professor presented a filmstrip on chemical weapons as part of an anti-war lecture? Would it violate it if a math instructor spent one class period talking about the importance of population control? Why or why not?

In contrast to the evaluation of this question I provided in Task 4 the N. E. A. code specifically remarks that the teacher "Shall use time granted for the purpose for which it is intended." This implies that the chemistry and not giving an anti-war lecture. And that the math teacher should not be talking about population control but about math. However, the code also obligates the instructor to help the student by stimulating "...thoughtful formation of worthy goals." If the determination of "worthy goals" is left to the educator each of these teachers could give their lectures, claiming they were fulfilling the latter respons-

ibility. Here it would be the way in which the lecture was given that would determine the ethical quality of the action.

I find myself in some disagreement with this response, but I believe it's a good response, nevertheless. Ms. Cardoza has correctly palpitated the issue: how far from the "standard" course should the teacher depart? The two examples cited by Ruggiero impress me as possibly legitimate applications of chemical and mathematical theory in current moral issues and thus, ethically allowable under the code. This is a good example of how even a well-stated code is open to conflicting, yet reasonable interpretations.

In this exercise, the student has shown a sensitivity to conflicting principles.

9. Term paper ghostwriting is surely not a new idea. But doing it on the scale of big business, with advertisements in college newspapers, branch offices, and a stable of writers, is. it is possible today to buy a term paper on virtually any subject, complete with footnotes and bibliography. Some companies even offer tailor-made papers. Is such a business ethical?

In the rules following Principle IV in the ethical code it says that the teacher, "Shall permit no commercial exploitation of his professional position." This demand is specifically concerned with employment practices but it could be considered relative to this question. This type of business is a definite exploitation of the term paper, a well-known educational method. From the point of view of the educator the ghostwriting business is unethical. Although it was for different reasons, I came to the same conclusion in Task 4.

Ms. Cardoza gives one plausible way to criticize the practice--in terms of professional employment practices. An alternative proscriptive ploy would be to note that the commercial term paper business interferes with the teacher's primary commitment to the student "...to stimulate the spirit of inquiry...and the thoughtful formulation of worthy goals."

10. Some time ago a young man filed a one million dollar lawsuit against the high school that graduated him, charging them with legal responsibility for his inability to read and write adequately. It would seem unlikely that the courts will find the school legally responsible for his ignorance. But is it possible they are morally responsible? Under what conditions might they be?

Because the student did not learn to read and write in twelve years of school the teachers he had certainly did not succeed in fulfilling their obligations to the student cited in Principle I of the N. E. A. code. It is not clear however, who is at fault for the student's lack of knowledge. The problem actually lies with graduating such a student, not the fact that he did not learn. By graduating him, the school grossly violates its responsiblity to the public to not "...distort or misrepresent the facts concerning educational matters..." In Task 4, the identical conclusion was reached.

The student MUST be right! She agrees with me.

11. Compulsory education, the required attendance of young people between certain ages (for example, between five and sixteen in many states), has become a tradition in the United States. The idea that requiring young people to attend school is an infringement of their right as citizens, a kind of slavery, is unthinkable to many Americans. Yet there are men and somen, some of them respected educators, who are openly expressing that idea. They argue that the child himself, or at least his parents in his behalf, should decide in the affirmative, where, what, and for how long he will study. Consider the thical side of the question. Are compulsory education laws morally wrong?

The ethical problem here deals with the rights of the public, contrasted with the rights of the individual student or parent. There is no provision in the N. E. A. code for such a broad question. In the educator's commitment to the public it states that "The educator believes that patriotism in its highest form requires dedication to the principles of our democratic heritage." This is an ambiguous phrase since what constitutes "patriotism in its highest form" is unclear. I would assume that this does mean that from the teacher's point of view the law must be adhered to and any changes that are proposed should be enacted through the democratic process. My answer in Task 4 dealt more specifically with the question but did not come to a more specific answer.

Ms. Cardoza's partial assessment of the code, itself, indicates a good grasp of the purpose and limitations of the document.

12. The age difference between teachers and students is sometimes relatively slight. A first year high school teacher could be 21 and a high school senior seventeen. A college instructor could be 25 and a college senior 22. Would it be in any way unethical for such teachers to date their students? Would it be different if the students were not in their classes?

A teacher is obligated by the code to not expose a student to unnecessary embarrassment and to "...not use his professional relationships with students for private advantage." However, dating may not violate either obligation and still be considered unethical. Another moral consideration is the individual school's policy on the subject. In the absence of any guidelines, Principle I, No. 3, the teacher "...shall make resonable effort to protect the student from conditions harmful to learning..." should take precidence. If dating in any way violates this responsibility it would be unethical. This is a different from the one achieved in Task 4.

The student has touched all bases on this issue. She seems to know the difference between moral rules holding between individuals and ethical rules that adhere to roles such as "student" and "teacher".

13. Tenure is the permanent right to a position or an office. In teaching, tenure has traditionally been reserved for those who have proven themselves competent in the classroom. Once it is awarded, usually after a provisional term of from two to five or six years, the teacher may not be fired except for gross negligence of duty or some moral effense. The proponents of tenure have maintained that it frees the teacher from fears of petty pressures inside or outside the school and enables him to function at his creative best. But lately there seem to be a growing

number of opponents of tenure. These people contend that it tempts even the best teachers to relax professionally and stifles creativity. What are the ethical considerations that any full discussion of tenure should address, and why are those considerations important?

Tenure policy is dependent on the particular institution involved and is not dealt with by the N. E. A. code. However, the educator is held responsible to "...raise professional standards..." and "...to achieve conditions which attract persons worthy of trust to careers in education." Any discussion of tenure would then have to address itself to these standards as well as those concerned with the obligations to the education of the students. These are fewer considerations than dealt with in Task 4.

In her response, the student has picked out what I feel is the most applicable principle. Also, she's correctly identified the factual issue that must be determined: the effect--positive or negative--of tenure on teaching performance as scientifically measured.

14. As teachers' unions and professional associations grow in membership, teachers are becoming somewhat more militant and vocal in their demands for salary increases and improved benefits. This process makes the job of the administrator a very delicate one. Understandably, when faced with the annual decision of how to distribute salary increases, many administrators elect wherever possible to divide the money among all teachers rather than single out the most deserving ones. (Having everyone a little happy is less troublesome than having a few thrilled and many angry and questioning.) Which action is the more justifiable ethically? Be sure to consider all aspects, including the effects of each on action upon the quality of education.

To decide what action is the most ethically justifiable course of action depends on the climate of the school in question. But if the faculty has particular salary increase requests to make, they are obligated by the code to "conduct professional business through channels, when available, that have been jointly approved by the professional organization and the employing agency." The administration is responsible for building a relationship on "...dignity and mutual respect..." and therefore should listen to the faculty. Of course the quality of education must be kept in mind and this would lead to the conclusion, as I did in Task 4, that to keep everyone moderately contented would be the wisest choice.

I think the student has done well to assess the conditions which must be explored before determing the ethical choice. In the last sentence of the response, Ms. Cardoza has indicated a predilection for "rule-utilitarian" ethics, rather than individual justices.

15. Most teacher's retirement programs calculate the individual's pension based on the average salary earned during his highest earning years. Realizing this, some college presidents routinely promote every faculty member the year before his retirement (whether he meets the established requirements for the rank or not). Thus, the faculty member can get a slightly higher pension. Is this practice of routine promotion ethical?

According to N. E. A. standards, promoting an unqualified person is unethical. It states that an educator "...shall not delegate tasks to unqualified personnel." But if the teacher is qualified, there is nothing (in the code) that makes it unethical. This is not the same decision I reached in the first assignment.

The difficulty in matching the N. E. A. code to the case presented lies in the origin of the code--it's primarily for public-school practice, not higher education. However, this was a neat way to attack the problem.

16. Faced with estimates that by 1980 there will be twice as many trained teachers as there are teaching jobs, many college departments of education are considering curtailing their enrollments. Some critics have opposed such curtailment, arguing that it deprives students of their right to choose their carrers. Would such curtailment be morally permissible? Would your judgment be the same for a public college as for a private?

The very first rule of behavior for an educacor, following Principle I, is that he "...shall not without just cause restrain the student from independent action in his pursuit of learning." The tricky phrase here is "without just cause". It would be essential to determine if such paucity of jubs constitutes a sufficient reason to restrain the student. Because the code makes a point to include this rule, the ideal of independent action is shown to be very important. And since there is no apparent obligation to the public on the subject, it would seem that curtailment would be unethical. This is not consistant with my previous evaluation.

The student has (again) correctly concluded that the code fails to address certain kinds of contingency. I don't suppose that the condition alleged, ie. a surplus of teachers, was one contemplated at the time the code was formulated.

17. Is it ethical for a student not to work to his capacity? Is it ethical for him to study so diligently that he strains the limits of his physical and emotional endurance? Discuss the various degrees of underwork and overwork that occur among college students and decide in what circumstances each becomes a moral issue.

Since these ethical standards deal with the educator and not the student, there is no mention of this issue. The conclusions reached in Task 4 still seem to apply. These were basically that the morality of a student's over and under work depends on the obligation the student has, such as to family or job. Personal situations are the determining factor and there is no general answer.

Ms. Cardoza is right: this is a code for teachers, not students. There is a statement in the joint AAUP-NSA code (students' rights and responsibilities) about students' obligation to work to a reasonable approximation of capacity. But that code is not binding on students in the same way as the N. E. A. code applies to its voluntary (?) members.

18. The practice of cheating in homework and examinations is probably as old as old as education itself. And few would deny that it is an unethical practice in most cases. But what of the dilemma of students who do not cheat in their work but know other students who do? Discuss the moral considerations they should make in deciding whether to inform the teacher. And decide when they should, and when they should not, do so.

From the educator's ethical point of view provided by these standards he would desire a student to come forward if it would improve "the acquisition of knowledge and understand" of the student. Also the exposure of accused students to embarrassment must be considered. But because a teacher could work most effectively knowing what is happening in the class it would be to his (professional) advantage to have a student come forward in all but the most trivial cases of cheating. This approach demands more of the student than my appraisal in Task 4.

The age-old issue of cheating is getting muddier by the decade. It seems odd, but remains true, that the teaching profession has not taken a stand on cheating in its professional-ethical code. Ms. Cardoza's evaluation is one that's widely professed, however.

If the reader will consider the characteristics of Ms. Cardoza's responses, it will become apparent that she's done several things consistently in her paper:

a. She's searched the professional code thoroughly, identifying applicable language--which she's quoted in arguing her points. Her quotations show a specific knowledge of what applies.

b. Whenever the code has a "blank spot"--contains no applicable rule--she's said so.

c. When an example contemplates the actions of someone outside the profession, she's put forward a credible attempt to define what the code requires the teacher to do in response.

d. She's attempted to take into account, conditions that must be explored before coming to a firm conclusion.

e. She's compared what the code requires to her own private moral judgments (Task 4).

Oleanna Math Program

OLEANNA MATH PROGRAM

The Oleanna Math Program provides a complete high school and lower-division mathematics curriculum, eliminating lectures and minimizing required attendance; it was developed at a "commuting college" where time on the road cuts needed study time from busy students' schedules.

A few students have completed courses in this sequence with minimal on-campus conferences with the instructor, calling in by telephone to report progress and recieve some coaching through that media. Such students generally have completed one or more courses previous to the telephone-in term; in a few cases, students have completed courses while hospitalized or otherwise prevented from physical attendance on-campus.

Presently available in the ERIC collection are course outlines, syllabi, and auxilliary material in:

OLEANNA MATH PROGRAM MATERIAL. ED 103 088. Microfiche: $.76; hard copy: $9.51.
OLEANNA MATH PROGRAM SMORGASBORD (I). ED 103 089. Microfiche: $.76; hard copy: $1.95.

The Smorgasbord lists optional modules which may be used by students to improve grades or collated into special-purpose independent study learning contracts.

Since these materials were submitted to ERIC, several changes have been effected:

1. The Pre-algebra review path has been modified; a new text has been selected. Pages 5.3-5.7 following provide a new course outline and syllabus.
2. The text for intermediate algebra, standard path, has been published in a second edition, requiring slight changes in the course syllabus; pages 5.8-5.10 are a replacement of the syllabus.
3. A review path has been added to the course in analytic geometry; pages 5.11-5.15 provide a new course outline and a syllabus for the new track.

4. More modules have been developed for the Smorgasbord; pages 5.16ff provide master copies for those file-insertions.

Only one non-print item is used in the Smorgasbord at present: Coole: *Biological Cycles, An Audiotutorial Kit.*

Oleanna Math Program

PRE-ALGEBRA. Course Outline by Walter A. Coole, Skagit Valley College.

Skagit Valley College Course Number: Mathematics 1

Quarter credits: 3 Semester credits: 2

Average student completion time: 100 hours

Goal: The student should master thoroughly, all mathematical pre-algebraic operations needed to perform arithmetic calculations required in higher mathematical studies.

At the end of this course, the student will be able to perform the four fundamental operations on rational numbers; and compute decimal fractions and percentages. His terminal examination will establish his mastery at the 90th percentile for urban high school students.

The two-track approach.

A. The standard path assumes that the student has had little real mastery of elementary arithmetic, but allows for some skipping of already-mastered materials, based upon pre-testing of lessons.

The standard path's performance objectives, lesson-by-lesson are:

1. interpret standard numerals and exponentiated notation;
2. add and subtract whole numbers;
3. multiply and divide whole numbers;
4. factor whole numbers to prime factors;
5. multiply and divide rational numbers and state reciprocals;
6. add and subtract rational numbers;
7. add and subtract decimal numerals;
8. multiply and divide decimal numerals
9. compute percentages;
10. express quantities in terms of both metric and English conventions;
11. express ratios and proportions mathematically

12. compute averages, medians, and squares; approximate square roots

Optional mastery (for a grade of "A") includes mastery of some of the most basic algebraic truths, ie. being able to...

13. locate integers on a number line; perform four fundamental operations on integers and their inverses.

B. The review path assumes that the student is familiar with basic arithmetic and wants a bit of humor in his study. Its objectives are, unit-by-unit: being able to...

1. perform the four fundamental operations on whole numbers; factor them, express some with exponents, approximate square roots;

2. perform fundamental operations on fractions; solve word problems involving fractions;

3. perform fundamental operations on decimal numbers; convert between fractional and decimal representations of numbers; perform fundamental operations on signed numbers;

4. express numbers as percents; solve percentage problems.

Optional mastery (for a grade of "A") includes mastery of measurement problems and the fundamentals of the metric system and the fundamentals of algebraic lore described in (A. 13) above.

Entry. In addition to basic numerical familiarity, the entering student should be able to:

i. read and follow wimple written instructions
ii. state his educational objectives in simple, coherent terms
iii. study systematically and diligently

Student materials.

Pencil, paper, and protractor

Standard Path:

Deedy & Bittinger: *Arithmetic, a Modern Approach.* Reading, Mass.: Addison-Wesley Publishing Co. 1971.

Coole, Walter A.: *Pre-Algebra Arithmetic--Syllabus for Standard Path*

Review Path:

Carman & Carman: *Basic Mathematical Skills.* New York: John Wiley & Sons. 1975.

Coole, Walter A.: *Pre-Algebra Arithmetic--Syllabus for Review Path*

Teacher preparation:

Study instructor's manuals and testing materials provided by the publishers.

Other materials required:

Oleanna Math Program: *The Student-Decision Placement Test.*

Cooperative Testing Service: *Cooperative Math Test--Srithmetic* (Forms A, B, and C and users' manual.) Palo Alto, CA: Cooperative Testing Service. 1969.

Oleanna Math Program: *Smorgasbord.*

Oleanna Math Program

Pre-algebra -- Syllabus for Review Path
by Walter A. Coole, Skagit Valley College

Your *goal* for this course is to master all of the arithmetic fundamentals necessary to do well in a basic algebra course. Along with this mastery, you will learn a number of useful tricks in applying your mathematical skills to "real world" problems.

This course is divided into four "units", each of which will require less than 25 hours' work for the student who is familiar with the subject matter, but has not mastered it thoroughly. By following directions in this syllabus and in the text, you'll be able to avoid spending time on topics already mastered sufficiently.

Each of the four "units" of the basic course are associated with Chapters I-IV of the text. By completing these four and passing the final exam, you will achieve a grade of "B" for the course. To achieve a grade of "A", you may pursue one of a number of optional units of study. Consult the instructor if you wish to select an "A" project. You may also choose to complete Chapters V and VI in the text to attain a grade of "A".

From the completion-schedule provided, please enter the deadlines for each unit of study. You must maintain this schedule; if you wish to procede more rapidly, you certainly may. If you wish to include Chapters V and VI in your own planning, you may wish to enter earlier dates in your planning, for units I-IV and pre-plan your time for the "A" project.

Unit	Completion date
I	_____
II	_____
III	_____
IV	_____

----------Basic course----------

V	_____
VI	_____

Final Exam (latest date)_____

For this course, you'll need paper, pencil, and the following textbook:

Carman & Carman: *Basic Mathematical Skills*

DO ALL OF YOUR WORK IN PENCIL!

Read in the Text: pp. xi-xii

HOW TO STUDY EACH UNIT

In each of the four chapters of the text, you'll see at the beginning, a "preview".

Read the objectives and attempt the sample problems. Mark each section whose problems you can work. (If you can work all of the problems and are reasonably sure you can meet the objectives, skip to the self-test at the end of the chapter. If you can score 90% on the self test, procede to the next chapter. If you can't, return to the beginning of the chapter and study the chapter.)

Study only those sections whose problems you can NOT work--consult the right hand columns of the preview to locate the passages to be studied. As you master each section, check off that section and procede to the next.

When you've studied all the sections of the chapter you need to, take the self-test at the end of the chapter. If you achieve 90% on the self-test, procede to the next chapter; if not, re-study the chapter.

Completing the Course

After you've mastered Chapters I-IV (as shown by scoring 90% on each of the self-tests), ask your instructor for the final examination.

You may then procede to your "A" project--either by:

coaching

completing Chapters V and VI

selecting and completing work from the Smorgasbord

Oleanna Math Program

Syllabus for INTERMEDIATE ALGEBRA
(Standard Path) by Walter A. Coole,
Skagit Valley College

Your *goal* for this course is to master all of the principles of the intermediate stage of algebraic studies. Such mastery will enable you to do well in more advanced studies. Along with this mastery, you'll learn a number of useful ways to solve "real world" problems with algebraic methods.

This course is divided into four "units", each of which will require about 40 hours' work. By following directions in this syllabus, you'll be able to avoid spending time unnecessarily on information you've already mastered. The units of the course are:

Unit	Lesson	Completion date
I	Pre-test	_____
	1	_____
	2	_____*
II	3	_____
	4	_____
	5	_____*
III	6	_____
	7	_____*
IV	8	_____
	9	_____
	10	_____*
	Final	_____*

Your completion date for the pre-test should be the day of your earliest scheduled conference.

Completion dates for each unit (marked by asterisks*) should be filled in from the scheduled provided. If you're beginning at the opening of a school term, your schedule will be posted on the bulletin board; otherwise, your teacher will work out a special schedule for you.

(2nd Ed.)

5.8

For this course, you'll need paper, pencil, and the following textbook:

Keedy & Bittinger: Intermediate Algebra--A Modern Approach

DO ALL OF YOUR WORK IN PENCIL!!

Pre-test

At the very front of the textbook, you'll find a 'PRETEST'. Write your answers to the pre-test on a sheet of notebook paper.

Score your results from the answers given in the back of the book.

Note the "Pretest Analysis" which tells you which lessons you may skip. If you wrote as many as 55 correct answers on the pre-test, you should then skip to the "Final Examination" at the back of the text. If you can write 50 correct answers from this test, you should contact the instructor for the "official" course-completion test.

How to Study Each Lesson

Each chapter in the textbook corresponds to a lesson in this course. By using your pretest results, you should be able to decide which lessons to omit.

Each chapter of the text is divided into several sections. Begin each section by reading the objectives (what you should learn) and then the explanation.

Write the answers to problems as you are directed in the text.

As you complete each section's "Margin Exercises", check your answers in the back of the book. If you have difficulty, see your instructor or a math coach as soon as possible.

Next, complete the odd-numbered exercises in all exercise sets at the end of the chapter. Then score your results, using the answers given in the back of the book.

To complete the lesson, take the test at the end of the chapter. Score your results, using the answers at the back of the book and follow the directions given in the test analysis.

When you've scored satisfactory results, remove the chapter test from the book and turn it in. If the test uses more than one sheet, staple them together at the upper left-hand corner. The tests will be returned as soon as they are recorded.

Completing the Course

After you've mastered all of the chapters of the textbook—either by scoring perfect on the pre-test or by achieving a satisfactory grade on the end-of-chapter test—complete the final examination provided at the back of the book. Score your results against the answers in the back of the book and follow directions given in the analysis.

When you've scored 40 or better on the final examination, you are ready to take the "official" course completion test.
You may take this test at any scheduled conference or by appointment. You'll need paper, pencil, and a 50-entry student response card (on sale at the bookstore). You may use your textbook and notes during the test. Average completion time for the end-of-course test is 40 minutes, but may take longer if you wish.

Grading

When you've completed the end-of-course test, you may close off the course with a grade of "B". If you wish to improve your grade to an "A", you may act as a coach or undertake optional projects from the "Smorgasbord". This may be done during the following term and your "B" will be changed to an "A".

Olcanna Math Program

ANALYTIC GEOMETRY. Course Outline by
Walter A. Coole, Skagit Valley College.

Skagit Valley College Course Number: Mathematics 120

Quarter credits: 4 Semester credits: 3

Average student completion time: 120 hours

Goal. In this course, the student should learn how to describe plane figures algebraically--including "conic sections"; and conversely, how to depict algebraic formulae in conventional ways. In doing so, the student should be able to locate mathematically and scientifically significant regions relating to the "conic sections."

Performance objectives. Lesson-by-lesson, the student is required to demonstrate the following abilities: to...

1. locate points and line-segments on one-dimensional coordinate systems

2. translate statements of inequality, involving one variable, into graphic representations, using the one-dimensional coordinate system

3. translate statements of absolute value, involving one variable into graphic representations, using the one-dimensional coordinate system

4. translate one-variable formulae involving both absolute value and inequality into graphic representations

5. account for signed numbers in terms of directed distances

6. construct cartesian coordinate systems; locate points in cartesian space; explain in his/her own words, conventional quadrant-assignments

7. compute distances between two points located in cartesian space

8. given two cartesian points, compute a midpoint between; locate points on joining-lines in any proportional distance

9. given any two cartesian points, compute the slope of a line which includes them

calculate the slope of lines parallel to and perpendicular to a line, given the location of any two included points

11. produce the tangent of the angle between two lines, given points which determine them

12. given an equation in two variables, represent it as a line in planar cartesian space

13. calculate x- and y-intercepts of a line corresponding to an equation; describe figures in terms of mathematical symmetry; describe asymptotes of curved figures in algebraic language

14. describe lines in terms of conventional "standard" forms: point-slope, two-point, slope-intercept, and 2-point intercept

15. specify the degree of an equation

16. give the standard form of a circle's equation; given a circle's equation, compute its center and radius

17. give the standard form of a circle's equation; given a parabola's equation, compute: directrix, focus, vertex, axis, latus rectum

18. give the standard form of an elipse's equation; given an elipse's equation, compute; foci, constant distance, axis of symmetry (major and minor), center, latera recta

19. give the standard equation of an hyperbola; given an hyperbola's equation, compute its foci, axes (conjugate and transverse), center, vertices, asymptotes, latus rectum

20. "move" figures from one coordinate system to another without d dropping, bending, or breaking them, given their formulae in the original system and some importan[illegible] as to where the other system could possibly be

21. figure out just h[illegible]entric a conic could be, given its formula; and what sort of goofy things it will do as a result of that eccentricity

A briefer "review path" meets the same objectives.

Entry.

The student entering this course should have mastered thoroughly, the content of "Periodic (Trigonometric) Functions". In addition, he/she should be able to:

i. read and follow simple written instructions

ii. state his educational objectives in simple, coherent terms

iii. study systematically and diligently

Student materials.

Paper, pencil, graph paper, straight edge

Standard Path

Davis, Thomas A.: *Analytic Geometry--A Programmed Text.* NY. McGraw-Hill Book Company. 1967

Coole, Walter A.: *Analytic Geometry--Syllabus for Standard path*

Review Path

Smith, Karl J.: *Analytic Geometry--A Refresher.* Monterey, CA Brooks/Cole Publishing Co. 1975

Coole, Walter A.: *Analytic Geometry--Syllabus for Review Path*

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teacher preparation: study instructor's manual, testing materials and text

Other materials required.

Cooperative Testing Service: *Cooperative Math Test--Analytic Geometry* (Forms A and B and user's manual). Palto Alto, CA: Cooperative Testing Service. 1969

Cleanna Math Program: *Smorgasbord*

Oleanna Math Program

ANALYTIC GEOMETRY. Syllabus for Review Path. by Walter A. Coole, Skagit Valley College

Your *goal* for this course will be to learn how to describe plane figures algebraically--including "conic sections"; and conversely, how to depict algebraic formulae in conventional ways. In doing so, you should be able to locate mathematically and scientifically significant regions relating to the "conic sections".

This course is divided into four units. The first of these will take about 4 hours' study, and the remaining three will take from 4 to 12 hours' study, depending on how rusty your analytic geometry is.

Please work out a set of target completion dates with the aid of a calender. Unit II should be completed by mid-term and Unit IV should be completed at least one week before the last day of the term. If you have difficulty, consult your instructor for help.

Unit	Target date
I	_____
II	_____
III	_____
IV	_____

Note: if you intend to complete an "A" project (about 12 hours' work) you should allow for this in working out your schedule.

Unit I

( ) Read pp. 105-108 and complete Sample Test I, scoring your results from the answers given on p. 127.

( ) Review pp. 111-121 carefully to refresh your memory on the information presented--it'll save you scratching your head later on.

Units II-IV

Each of these units of study cover three chapters of the text, beginning with chapter 1. Complete all of the reading and practice solving the example problems in each chapter. Then, check your understanding of the content by working the problem-sets at the end of each chapter. Score your results against the answers given in the back of the book.

In order to be sure you're learning (or remembering) the chapter's content, you should be getting about 95% scores.

When you've completed Unit IV (Chapter 9), you should re-read the course objectives, assuring yourself that each has been met.

Then you're ready to double-check your mastery by taking Sample Test II, pp. 109-110 and checking your answers against those given at the back of the book.

When you've attained a score of 95%, you're ready for the final exam. See the instructor.

Shasta Math Program

ANALYTIC GEOMETRY. Syllabus for Review Path. by Walter A. Coole, Skagit Valley College

Your *goal* for this course will be to learn how to describe plane figures algebraically--including "conic sections"; and conversely, how to depict algebraic formulae in conventional ways. In doing so, you should be able to locate mathematically and scientifically significant regions relating to the "conic sections".

This course is divided into four units. The first of these will take about 4 hours' study, and the remaining three will take from 4 to 12 hours' study, depending on how rusty your analytic geometry is.

Please work out a set of target completion dates with the aid of a calender. Unit II should be completed by mid-term and Unit IV should be completed at least one week before the last day of the term. If you have difficulty, consult your instructor for help.

Unit	Target date
I	_____
II	_____
III	_____
IV	_____

Note: if you intend to complete an "A" project (about 12 hours' work) you should allow for this in working out your schedule.

Unit I

( ) Read pp. 105-108 and complete Sample Test I, scoring your results from the answers given on p. 127.

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Each of these units of study cover three chapters of the text, beginning with chapter 1. Complete all of the reading and practice solving the example problems in each chapter. Then, check your understanding of the content by working the problem-sets at the end of each chapter. Score your results against the answers given in the back of the book.

In order to be sure you're learning (or remembering) the chapter's content, you should be getting about 95% scores.

When you've completed Unit IV (Chapter 9), you should re-read the course objectives, assuring yourself that each has been met.

Then you're ready to double-check your mastery by taking Sample Test II, pp. 109-110 and checking your answers against those given at the back of the book.

When you've attained a score of 95%, you're ready for the final exam. See the instructor.

→ 1/26 → Quickie Review: Trigonometry

Oleanna Math Program
Smörgåsbord

Performance objective(s): undefined

Prerequisite: Periodic Functions Time: 16 hours

Student materials: Feldman, Bernard Trigonometry. Wadsworth Publishing Co. Belmont, CA 94002 $2.00

Comment: Thorough review of the prerequisite course.

→ 1/27 → Quickie Review: Analytic Properties of Trigonometric Functions

Oleanna Math Program
Smörgåsbord

Performance objective(s): undefined

Prerequisite: Periodic Functions Time: 16 hours

Student materials: Feldman, Bernard, Analytic Properties of Trigonometric Functions. Wadsworth Publishing Co. Belmont, CA 94002 $2.00

Comment: Thorough review of the prerequisite course.

→ 1/28 → Quickie Review: Analytic Geometry in R^2

Oleanna Math Program
Smörgåsbord

Performance objective(s): undefined

Prerequisite: Analytic Geometry Time: 16 hours

Student materials: Feldman, Bernard, Analytic Geometry in R^2. Wadsworth Publishing Co. Belmont, CA 94002 $2.00

Comment: Thourough review of the prerequisite course.

→ 1.31 → Quickie Review: Analytic Geometry in R^3

Oleanna Math Program
Smörgåsbord

Performance objective(s): undefined

Prerequisite: Analytic Geometry Time: 16 hours

Student materials: Feldman, Bernard, Analytic Geometry in R^3. Wadsworth Publishing Co. Belmont, CA 94002 $2.00

Comment: Thorough review of the prerequisite course.

For 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract & Catalog, published by Coole & Reitan.

Oleanna Math Program
Smörgåsbord

Performance objective(s): read critically, research literature of social and health sciences for its statistical content.

Prerequisite: Probability and Statistics Time: 20 hours

Student materials: Stahl, Sidney and Hennes, James D. Reading and Understanding Applied Statistics. The C.V. Mosby Co. 11830 Westline Industrial Dr. St. Louis, MO 63141 $6.00

Comment: This is a good optional project for students whose upper-division and graduate work requires research of statistical reports.

→ 1/32 → Logic & Set Theory

Oleanna Math Program
Smörgåsbord

Performance objective(s): construct truth tables and simple proofs in the sentential calculus; perform operations on sets; construct Venn diagrams; apply set theory to solve problems in probability.

Prerequisite: Basic Algebra Time: 14 hours

Student materials: Cheifetz, Phillip M and Avenoso, Frank J.: Logic and Set Theory. Wadsworth Publishing Co, Inc. Belmont, CA. $4.00

→ 1/33 → Quickie Calculus

Oleanna Math Program
Smörgåsbord

Performance objective(s): apply elementary techniques of differential and integral calculus.

Prerequisite: Intermediate Algebra Time: 15 hours

Student materials: Kleppner, Daniel & Ramsey, Norman: Quick Calculus. John Wiley & Sons, Inc. 605 Third Ave. New York, NY 10016 $4.00

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or 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract 5.19

→ 4.1/1 → Medical Dosage Calculations

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Yleanna Math Program
Smörgåsbord

Performance objective(s): measure quantities in metric units; convert to metric from apothecary and household measures; measure oral medications; compute rate of flow, mixtures, and solutions

Prerequisite: Basic Algebra Time: 8 hours

udent materials: Olson, June L., Ablon, Leon J., Geangrasso, Anthony P., Siner, Helen B., Medical Dosage Calculations. Simm, Module M. Cummings Publishing Co. 2727 Sand Hill Rd. Menlo Park, CA 94025 $2.00

→ 4.1/2 → Nursing Math

Yleanna Math Program
Smörgåsbord

Performance objective(s): measure quantities in metric units; convert to metric from aptohecary and household measures; measure or al medications; compute rate of flow, mixtures, and solutions

Prerequisite: Basic Algebra Time: 33 hours

tudent materials: Sackheim, Geo. I. and Robins, Lewis: Programmed Mathematics for Nurses. Macmillan Pub. Co. Inc. 866 Third Ave New York, Ny 10022 $6.00

'or 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract

→ 4.4/1 → Basic Math Concepts for Physics

Oleanna Math Program
Smörgåsbord

Performance objective(s): Perform basic algebraic computations used in introductory physics courses

Prerequisite: Intermediate Algebra Time: 20 hours

Student materials: Carman, Tobt. A.: Numbers and Units for Physics. John Wiley and Sons, Inc 605 Third Ave. New York, NY 10016 $5.00

→ 4.4/2 → Advanced Math Concepts: Mechanics & Heat

Oleanna Math Program
Smörgåsbord

Performance objective(s): perform advanced algebraic computations used in physics courses dealing with mechanics and heat.

Prerequisite: Analytic Geometry Time: 20 hours

Student materials: Gray, Robert L.: Physics Problems: Mechanics and Heat. John Wiley and Sons, Inc. 605 Third Ave. New York, NY 10016 $3.95

For 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract 5.21

→ 4.4/3 → Advanced Math Concepts: Electricity, Magnetism and Optics

Oleanna Math Program
Smörgåsbord

Performance objective(s): perform advanced algebraic computations used in physics courses dealing with electricity, magnetism, and optics.

Prerequisite: Analytic Geometry Time: 20 hours

Student materials: Gray, Robert L.: -Physics Problems: Electricity, Magnetism and Optics. John Wiley and Sons, Inc. 605 Third Ave. New York, NY 10016 $3.95

→ 4.7/1 → Advanced Engineering Math

Oleanna Math Program
Smörgåsbord

Performance objective(s): (generally) high degree of engineering mathematics skill

Prerequisite: calculus, physics Time: 35 hrs/chapter

Student materials: Kreysziy, Erwin: Advanced Engineering Mathematics. John Wiley & sons, Inc. 605 Third Ave. New York, NY 10016 $15.95

Other Materials: Dreysziy, Erwin: Instructor's Manual for Advanced Engineering Mathematics.

For 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract

→ 4.5/1 → Elementary Metric System

Oseanna Math Program
Smörgåsbord

Performance objective(s): "Speak the language" of the metric system; perform most cnoversions between the English and the metric systems.

Prerequisite: Pre-algebra Time: 15 hours

Student materials: Gilbert: Thinking Metric. John Wiley & Co. 605 Third Ave. New York, NY 10016 $3.00

For 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract 5.23

→ 4.6/1 → Statistics in the Behavioral Sciences

Meanna Math Program
Smörgåsbord

Performance objective(s): interpret statistical reports in sociology psychology, education, and the health sciences

Prerequisite: probabilitiy & Statistics Time: 25 hours

tudent materials: Stahl, Sidney M. & Hennes, James D.: Reading and Understanding Applied Statistics. C.V. Mosby Co. 11830 Westline Industrial Drive, St Louis MO 63141 $5.95

Comment: The content of this module should be sufficient enrichment of the course "Probability & Statistics" to serve the needs of graduate students in the disciplines listed above.

?or 5" X 8" format, cut along dotted lines. For current updates consult: Greenbook Abstract 5.24

Tiger
Learning Skills

TIGER LEARNING SKILLS

The intention of this program is to insure that the average to bright student has the basic skills to survive the freshman year in college (leaving reading and writing skills to other programs); the student then is provided with a mechanism for selecting and pursuing particular competencies from a large selection: for higher grades in the "core course" or additional independent-study learning contracts.

This program uses available commercial materials, both print and audiotutorial.

Materials to be submitted to ERIC in September, 1975 will include a course outline, course syllabus, working materials for students, and the first materials organized into a project file. Title: *Tiger Learning Skills.*

UNIVERSITY OF CALIF.
LOS ANGELES

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CLEARINGHOUSE FOR
JUNIOR COLLEGES